Malaria in New York City

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By the mid-1950s, malaria had been eradicated from endemic areas in the United States. Since that time, nearly all cases reported in this country have been imported by travelers returning from a malarious area. Blood-borne exposure, through needle sharing or receipt of blood or blood products, is rarely reported.

In New York City, an increase in the incidence of malaria began in the late 1980s (Fig. 1). This rise primarily reflects the growing volume of international travel in recent years, since most cases have occurred among travelers returning from endemic areas.

In 1994, 104 cases of malaria (1.4 per 100,000 population) were reported in New York City. Children (aged 1 to 4) lacking prior immunity usually have the highest age-specific rates (2.4 per 100,000 population). Gender-specific attack rates are almost always higher in males; in 1994, the case rate among males (1.9 per 100,000 population) was more than twice the rate among females (0.9 per 100,000 population).

The New York City Department of Health investigates all malaria cases to determine the species involved and to ascertain risk factors for infection. In 1994, the most common species identified among New York City cases were *P. falciparum* (n = 63, 61%) and *P. vivax* (n = 25, 24%). Two patients had mixed infection with both *P. falciparum* and *P. vivax.*

All 1994 cases reported recent travel to a malaria-endemic area. Most patients had traveled to Africa (n = 77, 74%), with Nigeria (n = 27) and Ghana (n = 18) being the most frequently visited countries. Less frequently reported was travel to countries in Asia (n = 13, 12%) and Latin America (n = 7, 7%). Most cases occurred

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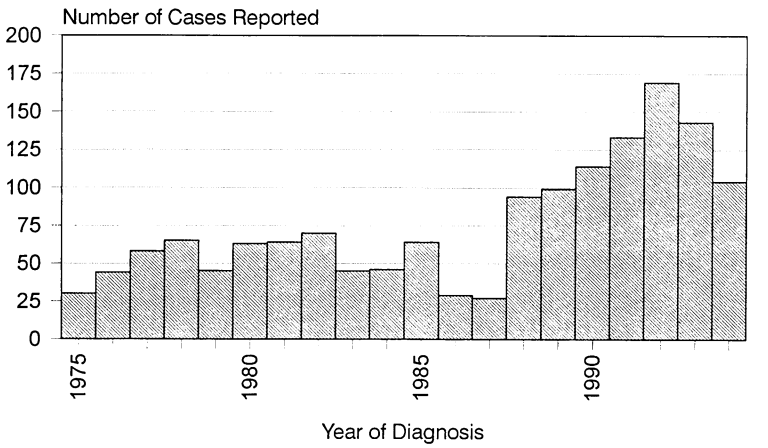

FIG. 1. Number of malaria cases reported in New York City from 1975 through 1994.

among persons born overseas, who were either newly arrived in the United States or who were returning home to their native countries to visit. Few patients reported taking malaria prophylaxis before traveling overseas.

Since chloroquine-resistant *P. falciparum* is now common in most malarious areas, physicians need to consider the patient's travel histories in prescribing both prophylactic and therapeutic regimens. Resistance of *P. falciparum* to chloroquine has been confirmed in all countries with falciparum malaria, with the exception of the Dominican Republic, Haiti, Central America west of the Panama Canal zone, Egypt, and most countries in the Middle East. Resistance to mefloquine has been reported in Thailand.[1]

The occurrence of malaria in patients without travel histories or blood-borne exposure is still reported occasionally in the United States. In the last few years, there has been a change in the epidemiology of locally acquired malaria, with transmission occurring in more densely populated and developed areas. In 1993, the New York City Department of Health, in collaboration with the Centers for Disease Control and Prevention (CDC), investigated a cluster of *P. falciparum* malaria among three residents of Queens who denied risk factors for infection.[2] The Health Department and the CDC team concluded that the route of transmission was

through local mosquitoes that became infective after feeding on gametocytemic hosts.

Local malaria transmission in such an unlikely setting as New York City illustrates the need for continued timely surveillance for infectious diseases that may no longer be considered a public health threat. Malaria was highlighted in a recent report by the Institute of Medicine on emerging infections in the United States to illustrate the risk for the reappearance of diseases thought to be eradicated.[3]

References

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